

Weight and Metabolism

MOTS-c 50mg

About

MOTS-c is a mitochondrial-derived peptide being studied for its potential to support metabolic function, increase energy, and promote healthy aging by regulating cellular stress and enhancing fat metabolism.

*These products are for research use only and are not intended for human consumption, medical use, therapeutic use, or diagnostic purposes. They are not to be used in foods, drugs, cosmetics, dietary supplements, or any products intended for humans or animals. Peptides are not sterile, have not been tested for safety or efficacy in humans, and must not be injected, ingested, inhaled, applied to the skin, or administered in any form. No product sold is intended to treat, cure, mitigate, or prevent any disease.

What's Included

- One vial, concentration: 50mg/5mL
- One vial lasts approximately one month

Reconstitution kit

- (20) 29-30G subq needles
- (1) 5mL syringe
- (1) 25G needle with syringe
- (1) 10 mL bacteriostatic water

Clinical Research Potential Benefits:

- May help support cellular metabolism and energy production
- May improve exercise endurance and post-workout recovery
- May promote longevity and healthy aging pathways
- May help regulate insulin sensitivity
- May encourage fat breakdown and weight management
- May support overall mitochondrial health

Reconstitution & Administration*

Clinical Research Suggested Use:

- Draw up 50 units (5mg) into the syringe
- Inject 3x per week
- Duration: 1 month
- Reconstitute: add 5mL of bacteriostatic water to the to the lyophilized powder vial
- Injection type: subcutaneous injection
(*Can be administered IM if experiencing redness, itching or swelling at the injection site).

*Instructions start on page 2

MOTS-c 50mg Reconstitution

One

Prepare

STEP 1: Remove plastic covers, clean vial and bacteriostatic water top with alcohol pad for 15 seconds

STEP 2: Using the large syringe from your administration kit, pull out 5mL of Bacteriostatic water

- It may take a few repetitions to load your syringe with the 5mL with no air pockets

STEP 3: Once you've loaded your syringe, slowly inject the 5mL of Bacteriostatic water into your MOTS-c vial:

- On its side to not damage the bonds of the product
- Do not shake, gently swirl if needed
- Allow the solution to sit for at least 5 minutes

***Supplies:** 5 mL syringe (large), 25G needle, Bacteriostatic water, MOTS-c vial, Alcohol pad

Two

Pull

STEP 1: With the smaller needle draw up 50 units of the MOTS-c into the small syringe from your kit

***Supplies:** 29G-30G subcutaneous syringe with needle (small), Alcohol pad

Three

Inject

STEP 1: Clean the injection area with an alcohol pad

STEP 2: Inject subcutaneously (see pg 3)

- Repeat 2-3 days per week
- Duration: 1 month
- One vial lasts approximately one month

Injection Steps

Subcutaneous Injection steps:

1 Choose & Clean the Injection Site

- Use the abdomen (3 inches from the belly button), thigh, hip, or back of the upper arm. Rotate sites to prevent irritation. Clean the area with an alcohol swab and let it dry.

2 Inject

- Pinch 1 to 2 inches of skin, insert the needle at a 90° angle, and slowly push the plunger down.

3 Remove the Needle & Dispose

- Pull the needle out at the same angle, apply light pressure with gauze (don't rub), and dispose of the syringe safely.

4 Monitor for Reactions

- Mild redness or soreness is normal. Seek medical help if you experience severe pain, swelling, or an allergic reaction.

Intramuscular Injection steps:

1 Choose & Clean the Injection Site

- Use the thigh (vastus lateralis), upper arm (deltoid), or glute (ventrogluteal or dorsogluteal muscle).
 - Rotate sites to prevent soreness. Clean the area with an alcohol swab and let it dry.

2 Inject

- Stretch the skin taut, hold the syringe like a dart at a 90° angle, and insert the needle quickly and smoothly. Slowly push the plunger down to inject.

3 Remove the Needle & Dispose

- Pull the needle straight out, apply light pressure with gauze (don't rub), and dispose of the syringe in a sharps container.

4 Monitor for Reactions

- Mild soreness or redness is normal. Seek medical help if you experience severe pain, swelling, or an allergic reaction.

MOTS-c Mechanism of Action

- **Activation of AMPK and Metabolic Regulation:**
 - MOTS-c activates AMP-activated protein kinase (AMPK), a central energy sensor that regulates cellular energy homeostasis. AMPK activation enhances glucose uptake, fatty acid oxidation, and mitochondrial biogenesis—improving energy balance during metabolic stress and supporting efficient ATP production.
- **Folate Cycle Inhibition and Glycolytic Shift:**
 - By suppressing the folate cycle, MOTS-c redirects cellular metabolism toward glycolysis and away from mitochondrial oxidative phosphorylation. This adaptive shift helps preserve ATP levels and sustain energy output under stress conditions.
- **Nuclear-Mitochondrial Communication:**
 - Under metabolic stress, MOTS-c translocates from the mitochondria to the nucleus, where it interacts with transcriptional regulators to influence gene expression related to metabolism, antioxidant defense, and cellular resilience. This nuclear signaling bridges mitochondrial function with genomic response to stress.
- **Insulin Sensitivity and Glucose Homeostasis:**
 - MOTS-c exerts insulin-mimetic effects by enhancing GLUT4 translocation to the cell membrane, facilitating glucose uptake into skeletal muscle and adipose tissue. This action improves insulin sensitivity and contributes to stable glucose regulation.
- **Anti-Inflammatory and Cytoprotective Actions:**
 - MOTS-c downregulates pro-inflammatory signaling pathways, including NF- κ B activation, thereby reducing chronic inflammation and oxidative stress. These effects protect metabolic tissues and support overall cellular longevity.
- **Mitochondrial Function and Stress Adaptation:**
 - By enhancing mitochondrial efficiency and promoting biogenesis, MOTS-c improves cellular energy metabolism and stress tolerance. This contributes to improved metabolic flexibility, endurance, and protection against metabolic dysfunction.